


CLAIMS

What is claimed is:

Sub 1.  A method of setting Quality of Service bits of packets sent by a user of a data communications network, comprising:

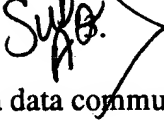
5 obtaining a user service profile configured with a QoS level for the user in response to a user log-in attempt to a service selection gateway;

routing all packets originated by the user through the SSG during the session;

10 setting, in the SSG, the QoS bits of packets originated by the user in accordance with the QoS level for the user; and

passing, after said QoS bits have been set, said packets on to the data communications network.

15 2. A method in accordance with claim 1 wherein all packets transmitted by the user have QoS bits set in accordance with the QoS level for the user.

Sub AB.  A method of setting the Quality of Service bits of packets sent by a user of a data communications network, comprising:

20 initiating a request to an authentication, authorization and accounting (AAA) server in response to the user's attempt to log-in;

receiving, in response to said request, a user service profile corresponding to the user, said user service profile including a Quality of Service field;

using said Quality of Service field to set QoS bits within packets
transmitted by the user.

4. A method in accordance with claim 3 wherein all packets transmitted by
the user have QoS bits set in accordance with said Quality of Service field of said user
service profile.

Sub A3 A method of setting the Quality of Service bits of packets sent by a user of
a data communications network, comprising:

10 at a service selection gateway to which the user is in communication a
request from the user to assign a particular Quality of Service level to at least one packet
flow transmitted by the user;

assigning, in response to said request, a Quality of Service level to said at
least one packet flow;

15 setting QoS bits within packets belonging to said at least one packet flow
received at the service selection gateway in accordance with said Quality of Service
level; and

transmitting said packets belonging to said at least one packet flow to the
data communications network.

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6. A method in accordance with claim 5 wherein all said packets of said at
least one packet flow in an IP packet.

7. A method in accordance with claim 6 wherein said QoS bits are the precedence bits within the ToS/Differentiated Services field of said IP packets.

8. A method in accordance with claim 5 further comprising:
communicating between the service selection gateway and an AAA server
said request.

9. A method in accordance with claim 8 further comprising:
communicating between the service selection gateway and the AAA

10 server information related to the quantity of packets transmitted by the user and modified
by the service selection gateway with respect to the QoS bits.

10. A method in accordance with claim 8, further comprising:
communicating between the service selection gateway and the AAA

15 server information related to the duration of time that packets transmitted by the user are
modified by the service selection gateway with respect to the QoS bits.

11. A method in accordance with claim 10, further comprising:
communicating between the service selection gateway and the AAA

20 server information related to the quantity of packets transmitted by the user and modified
by the service selection gateway with respect to the QoS bits.

Sub 12
AA

An apparatus for setting Quality of Service (QoS) bits of packets sent by a user of a data communications system to the data communications system, said apparatus comprising:

- 5 a service selection gateway (SSG) in communication with the user, said SSG also in communication with an authentication, authorization and accounting (AAA) server, said SSG receiving a user service profile including a QoS level from the AAA server in response to an attempt to log-in by the user; and
- 10 a packet modifier associated with said SSG, said packet modifier modifying QoS bits of packets sent by the user to reflect the QoS level received for the user from the AAA server.

13. An apparatus according to claim 12 wherein all packets transmitted by the user to the data communications network via the SSG are modified.

15 14. An apparatus according to claim 12 wherein packets belonging to at least one flow of packets transmitted by the user to the data communications network via the SSG are modified.

20 15. An apparatus according to claim 13 wherein all modified packets are IP packets.

16. An apparatus according to claim 14 wherein all modified packets are IP packets.

17. An apparatus according to claim 15 wherein the QoS bits are the precedence bits in the ToS/Differentiated Services field of the IP packet.

18. An apparatus according to claim 16 wherein the QoS bits are the precedence bits in the ToS/Differentiated Service field of the IP packet.

Sub A9. An apparatus for setting Quality of Service (QoS) indicator bits of packets sent by a user of a data communications system to the data communications system, said apparatus comprising:

a service selection gateway (SSG) in communication with the user and the data communications network;

a packet modifier associated with said SSG, responsive to a QoS request by the user, setting a QoS bit field of packets sent by the user to the data communications network via the SSG.

20. An apparatus according to claim 19 wherein said QoS bit field is set to a value specified in said QoS request.

21. An apparatus according to claim 20 wherein said QoS bit field is set for all packets sent by the user to the data communications network via the SSG.

22. An apparatus according to claim 20 wherein said QoS bit field is set for all packets sent by the user to the data communications network via the SSG which packets belong to at least one packet flow specified in said QoS request.

5 23. An apparatus according to claim 19 wherein said SSG is in communication with an AAA server and sends the AAA server information relating to the number of packets sent by the user to the data communications network via the SSG which are modified in accordance with said QoS request.

10 24. An apparatus according to claim 20 wherein said SSG is in communication with an AAA server and sends the AAA server information relating to the number of packets sent by the user to the data communications network via the SSG which are modified in accordance with said QoS request.

15 25. An apparatus according to claim 21 wherein said SSG is in communication with an AAA server and sends the AAA server information relating to the number of packets sent by the user to the data communications network via the SSG which are modified in accordance with said QoS request.

20 26. An apparatus according to claim 22 wherein said SSG is in communication with an AAA server and sends the AAA server information relating to the number of packets sent by the user to the data communications network via the SSG which are modified in accordance with said QoS request.

27. An apparatus according to claim 19 wherein said SSG is in communication with an AAA server and sends the AAA server information relating to the amount of time that said QoS request is in effect.

5 28. An apparatus according to claim 20 wherein said SSG is in communication with an AAA server and sends the AAA server information relating to the amount of time that said QoS request is in effect.

10 29. An apparatus according to claim 21 wherein said SSG is in communication with an AAA server and sends the AAA server information relating to the amount of time that said QoS request is in effect.

15 30. An apparatus according to claim 22 wherein said SSG is in communication with an AAA server and sends the AAA server information relating to the amount of time that said QoS request is in effect.